Risk management

Novozymes is exposed to a range of risks. Identifying and mitigating those risks as early as possible is integral to the success of our business and our partners, as it reduces uncertainty and keeps us on track to achieve our ambitions and deliver promised value and impact to our stakeholders.

Risk management framework

Novozymes periodically runs an Enterprise Risk Management (ERM) process, during which the key risks facing the company are identified, assessed, mitigated and reported at different levels of the organization. Risks are assessed based on a two-dimensional heat map rating system that estimates the impact of the risk on financials and/or reputation and the likelihood of the risk materializing. The most significant risks are reviewed and assessed by the Executive Leadership Team and the Board of Directors.

Responsibility for the process rests with Finance and ensures that top management has a high level of risk awareness, with involvement and ownership across the organization. Responsibility for all relevant risks rests with vice presidents of functions and geographical regions, who then act to mitigate risks in their respective areas of responsibility.

Key risks for Novozymes

The key risks identified for 2017 are Competition in industrial enzymes*, Volatility of starch-based ethanol business*, Loss of knowledge* and Delay of BioAg commercialization.

Risk assessment heat map

* Also a key risk presented in The Novozymes Report 2015.

See Note 5.1 for information on financial risk factors and risk management.
Competition in industrial enzymes

Description
Novozymes’ leading position in the market for industrial enzymes continues to be exposed to competition from existing and potential new competitors. Competitive threats could come from two areas in particular, namely the detergent industry and Chinese competitors supplying enzymes to various industries. Novozymes’ exposure to competition within these two areas is unchanged on last year in terms of impact and likelihood.

Potential impact
In detergents, increased competition could come from established enzyme manufacturers, such as DuPont, offering new competitive solutions, or from the entry of new players with a broader technology platform, for example offering solutions that combine enzymes with other technologies such as polymers. Fierce competition, especially among detergent producers in the mid- and low-tier segments, is enticing detergent producers to look for options to lower their production costs. This could include removing enzymes from detergents or opting for cheaper enzymes at the expense of wash performance.

Continued customer focus on cost cutting could impact Novozymes negatively if we are not able to respond quickly enough with suitable solutions catering to this demand. This also makes it more important to position Novozymes’ sustainable solutions as a competitive first choice for customers.

“By accelerating local innovation, Novozymes constantly seeks to optimize products tailored to local market needs in various market tiers.”

Consolidation among competitors in the industry could also impact the competitive landscape, depending on the nature of the consolidating parties and their combined potential. The planned merger of Dow Chemicals and DuPont continued in 2016 and is expected to close in early 2017. However, it is still too early to assess the impact on the enzyme market and consequently on Novozymes.

In 2016, the threat from Chinese competitors remained high on the agenda. Feed application within the Agriculture & Bioenergy industry is still the largest and most attractive market in China for local enzyme players to pursue. In recent years, Chinese manufacturers have started working with academia to develop new products for feed application. Furthermore, the technology barrier for Chinese competitors has lowered due to new faster and cheaper technologies, including independent laboratories and universities offering technology services. Global competition is further intensified by Chinese enzyme manufacturers exploring overseas markets.

Mitigation
Novozymes has an inherent competitive advantage due to its unique global approach to innovation and production. By accelerating local innovation, Novozymes constantly seeks to optimize products tailored to local market needs in various market tiers. To defend its position against competitors, Novozymes is focusing on delivering a strong innovation pipeline and novel solutions targeted particularly at important strategic partners and customers.

“In 2016, initiatives were implemented to speed up our global and local innovation pipelines to establish a faster route from lab to customer production sites.”

More than 20% of Novozymes’ workforce works in R&D, and we spend around 13% of sales on R&D, where our employees ensure that we have a contemporary product portfolio with new concepts and applications. In 2016, initiatives were implemented to speed up our global and local innovation pipelines to establish a faster route from lab to customer production sites. However, market volatility means it is difficult to ascertain how effective our mitigation efforts will be, making it difficult to predict the impact on our future growth. Monitoring the competitive situation and focusing on strengthening agility within the organization are key focus areas going forward.

Volatility of starch-based ethanol business

Description
Novozymes has long offered enzymatic solutions that optimize the conversion of grains such as corn, barley, wheat and rye into starch-based ethanol, used as an alternative to traditional fossil fuels. The Bioenergy industry currently makes up 17% of our total sales. US ethanol production in 2016 was up by an estimated 3% on 2015. However, ethanol producers have continued to focus on low-cost solutions, resulting in negative product mix and price changes. The industry is also beginning to see the emergence of new technologies, for example new types of yeast, that could impact demand for some of our enzymes.
Potential impact
Ethanol prices remained low throughout 2016 compared with historical levels, mainly due to sustained low oil prices as well as the low input cost of corn. This spurred producers to maintain their focus on lowering costs throughout 2016, challenging the value proposition of maximizing ethanol yield with Novozymes’ yield-enhancing solutions. More attractive pricing of dried distiller’s grains with solubles (DDGS) for animal feed, a by-product of the ethanol production process, is also tempting producers to shift their focus away from yield-enhancing solutions. If oil prices remain at their current levels in 2017, pressure on ethanol prices is likely to continue, unless we see a stronger political push for alternatives to traditional fossil fuels. If the current low-margin environment persists, it could increase pressure to lower input costs. Competition within the development of alternative technologies, for example yeast technology, could pose a threat to Novozymes’ market share in some enzyme segments.

“Ethanol prices remained low throughout 2016 compared with historical levels, mainly due to sustained low oil prices as well as the low input cost of corn.”

Mitigation
Novozymes continuously invests in R&D to develop even better enzyme solutions for improving yield and profitability to ensure that biofuels are a commercial alternative to traditional fossil fuels. We also continue to monitor competitor pricing in the industry to ensure that we offer the best price/performance ratio.

Loss of knowledge
Description
Novozymes’ business is driven by innovation in the form of pioneering biotechnology. Safeguarding sensitive business information and critical assets such as strains and intellectual property is essential in order to successfully protect and maintain Novozymes’ competitive edge. The risk is considered to have decreased slightly on 2015 due to the impact of our extensive focus on IT security and perimeter control throughout the company. Novozymes is a knowledge- and innovation-driven company, and the potential impact of the risk remains, making this a key risk area.

Potential impact
Any infringement of Novozymes’ unique technologies or theft of production strains or plans for unique innovation projects under development could lead to loss of business opportunities with new or existing customers. Cybercrime, including hacker attacks, is a growing problem and could impact Novozymes in several ways. The most significant impact relates to intellectual property, which could be compromised.

Mitigation
Novozymes pursues an active patent strategy by protecting new discoveries, production strains, formulations, and relevant know-how and processes as early as possible through a global information security strategy as well as IT governance, perimeter protection and access control. With more than 6,500 patents granted or pending, we actively defend our extensive product portfolio to prevent and stop infringement by competitors.

At the same time, competitors’ activities are constantly monitored to ensure that our innovations do not infringe existing patents, enabling product development costs and resources to be saved through early intervention. As part of a separate risk assessment, we also constantly analyze and evaluate how we handle and safeguard our production strains.

The assessment carried out at the end of 2016 evaluated the threat from external intruders such as hackers to be low. Activity by external intruders was down slightly on 2015, reflecting the improvements to the IT infrastructure and the faster response from Novozymes’ IT department.

To mitigate the risk of cyberattacks, our IT Security team continuously monitors and implements key security procedures and behaviors to prevent data theft. We also train employees at all sites in how to handle sensitive information.

Initiatives to protect and improve physical security were also implemented in 2016, and a global mandatory security training session was rolled out during the second quarter.

Delay of BioAg commercialization
Description
Novozymes entered into The BioAg Alliance with Monsanto in February 2014 to research, develop and commercialize sustainable biological solutions that use microbial technology to significantly increase plant health and productivity of crops worldwide. The BioAg Alliance combines Novozymes’ BioAg operations and capabilities within microbial discovery, development and production with Monsanto’s microbial discovery, advanced biology, field testing and commercial capabilities.

There are two risks related to the success of The BioAg Alliance:
The BioAg Alliance is dependent on both partners’ abilities to deliver on their respective obligations to the Alliance. Novozymes has committed to delivering on microbial discovery, development and production, while Monsanto will deliver on microbial discovery, advanced biology, field testing and commercialization. Should one of the partners be unable to deliver on one or more milestones as expected, the commercial success of the Alliance could be compromised.

In 2016, Bayer AG announced its intention to acquire Monsanto. Like any transaction of this type, Bayer’s potential acquisition of Monsanto entails some disruption and uncertainties. While there is a good basis for mutual value creation, there is a risk of short-term delays related to the integration of the Alliance within a consolidated Bayer–Monsanto.

Potential impact
Novozymes is dedicated to driving The BioAg Alliance further. We have invested significantly in developing and delivering on the Alliance and in nurturing a good relationship with Monsanto.

Should The BioAg Alliance not succeed commercially as expected, either due to Novozymes or Monsanto not delivering on their commitments to the Alliance or due to Bayer’s takeover of Monsanto, there could be a negative impact on Novozymes’ sales and earnings in the important agricultural industry, which currently makes up just under half of our current segment within Agriculture & Feed, but has the potential to be transformative for Novozymes in the long term.

Although a potential delay may cause short-term disruption, a merged Bayer–Monsanto could also be an attractive alliance partner for Novozymes in the long term, sharing its vision and commercial commitment, and increasing the commercial reach of the Alliance.

Mitigation
Both parties consider The BioAg Alliance to be a successful partnership. The technological progress already made by the Alliance, from discovery to field trials, confirms that the solutions produced by the Alliance are effective. After nearly three years of operations, the maturity of the Alliance reduces the risk of either Novozymes or Monsanto being unable to deliver on their promises.

In summer 2016, Novozymes’ Board of Directors had a successful meeting and visit to Monsanto’s headquarters, during which both partners’ dedication to the Alliance was once again confirmed.

The Board continues to place The BioAg Alliance high on its agenda, and prioritizes and follows developments closely.

In the short term, Novozymes’ priority is to ensure the success of the Alliance, and its focus is on getting full value from the recent launch of Acceleron® B-300 SAT, the first upstream treated inoculant for corn with more than two years’ on-seed stability. Derived from a fungus found in soil, Acceleron® B-300 SAT has a proven yield advantage of more than 3 bushels per acre (~1.5%). This is the first product jointly developed by the Alliance and shows the kind of innovation we can achieve within the partnership.

We look forward to continuing our close collaboration with Bayer as a new partner.